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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,715	07/25/2003	Tomonori Ishikawa	2018-755	9685
23117	7590	12/27/2004	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			POKER, JENNIFER A	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/626,715

Applicant(s)

ISHIKAWA ET AL.

Examiner

Jennifer A. Poker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/25/03; 5/7/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 1-18 in the reply filed on September 23, 2004 is acknowledged.

### *General Status*

2. This is a first action on the merits of application filed on July 25, 2003. Claims 1-18 are pending and are being examined.

### *Priority*

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 9-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 9, applicant states, "a primary coil which a primary coil wire is wound around..." AND, "a secondary coil which a secondary coil wire is wound around..." Examiner believes that the limitation was supposed to have read, "a primary bobbin which a primary coil wire

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is wound around..." AND "a secondary bobbin which a secondary coil wire is wound around..."

Prior art was applied accordingly.

*Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 5,610,219 to Takatani, et al.

Takatani, et al, discloses a resin compound comprising:

(1) an epoxy resin (column 1, line 17);

(2) a filler having plural particle sizes showing the maximum value of the frequency (on the basis of weight) in the particle size-frequency distribution curve of spherical fine particles, i.e. larger diameter have larger frequency; smaller diameter have smaller frequency, and it is desired that the ratio of the particle diameters having two maximum values thereof (larger particle diameter/smaller particle diameter) (column 6, lines 51-54).

It is inherent that there is a low location between the small and large spherical particles. Because the frequency is based on weight, it is inherent that the frequency between the two particles would be very low.

*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent Number 5,610,219 to Takatani, et al.

Regarding claim 4, Takatani, et al, discloses the claimed invention except for the specified frequency ratio of the large-diameter peak and the small-diameter peak being between 1:01 and 1:0.2. Takatani, et al, does disclose that there is a ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a ratio between large and small sized diameter peaks, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 5, Takatani, et al, discloses the claimed invention except for the specific range in frequency percentage for the small and large diameter particles and the valley. Takatani, et al, however, discloses that the frequency ranges are based on weight, i.e. larger diameters have larger frequency; smaller diameters have smaller frequency. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a the frequency of the large and small sized diameter particles and the valley, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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Regarding claim 6, Takatani, et al, discloses the claimed invention except for the specific ratios in diameter of the large diameter, small diameter and the valley. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a ratio of large and small sized diameter particles and the valley/space between them, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 7, Takatani, et al, discloses the claimed invention except for the specific range of diameter of the large and small diameter particles and the valley being 30-50 $\mu$ m, .7-3 $\mu$ m and 4-10 $\mu$ m, respectively. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a diameters of the large and small sized diameter peaks and the valley/space between them, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 8, Takatani, et al, discloses the claimed invention except for the specific frequency ratio of the valley to the large diameter particles being .08 or less. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable ratio between the valley and large diameter peaks, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

10. Claims 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,610,219 to Takatani, et al., in view of European Patent Number EP1209705A1 to Hitachi, et al.

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Regarding claim 9, Takatani, et al, discloses the claimed resin invention except for the specific use within an ignition coil device.

Hitachi, et al, discloses an ignition coil comprising:

- (1) a primary coil wound on a primary bobbin (abstract);
- (2) a secondary coil wound on a secondary bobbin (abstract);
- (3) an epoxy resin and soft epoxy filled between the abovementioned components (abstract).

One skilled in the art, at the time the invention was made would have found it obvious to combine the teachings of Takatani, et al, with the teachings of Hitachi, et al, and use the resin composition of Takatani, within the ignition coil of Hitachi, et al, for the purposes of insulating the coils, increasing mechanical strength without impairment of dimensional precision, smoothness, and low thermal expansion (Takatani, et al: column 2, lines 21-24).

Regarding claim 10, Takatani, et al, discloses the particles being spherical (column 6, lines 51-54; abstract).

Regarding claim 11, Takatani, et al, discloses the use of an epoxy resin (column 1, line 17).

Regarding claim 12, Takatani, et al, discloses the claimed invention except for the specified frequency ratio of the large-diameter peak and the small-diameter peak being between 1:01 and 1:0.2. Takatani, et al, does disclose that there is a ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a ratio between large and small sized diameter peaks, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 13, Takatani, et al, discloses the claimed invention except for the specific range in frequency percentage for the small and large diameter particles and the valley. Takatani, et al, however, discloses that the frequency ranges are based on weight, i.e. larger diameters have larger frequency; smaller diameters have smaller frequency. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a the frequency of the large and small sized diameter particles and the valley, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 14, Takatani, et al, discloses the claimed invention except for the specific ratios in diameter of the large diameter, small diameter and the valley. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a ratio of large and small sized diameter particles and the valley/space between them, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 15, Takatani, et al, discloses the claimed invention except for the specific range of diameter of the large and small diameter particles and the valley being 30-50 $\mu$ m, .7-3 $\mu$ m and 4-10 $\mu$ m, respectively. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a diameters of the large and small sized diameter peaks and the valley/space between them, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 16, Takatani, et al, discloses the claimed invention except for the specific frequency ratio of the valley to the large diameter particles being .08 or less. It would have been



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obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable ratio between the valley and large diameter peaks, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 17, Hitachi, et al, discloses ignition coil being is installed in a plughole of the engine in order to be directly coupled with each spark ignition plug (column 1, lines 5-8).

Regarding claim 18, Takatani, et al, in view of Hitachi, et al, discloses the claimed invention except for the distance ranging from 5-700mm between adjacent turns of the secondary coil wire. Hitachi, et al, discloses the use turns of secondary coil wire. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable range for a distance between turns of a secondary winding, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

### ***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Poker whose telephone number is 571-272-1997. The examiner can normally be reached on 4:30-3:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jap  
December 21, 2004

  
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